

## **PAYS<sup>®</sup> Programs in the U.S.: Overview of Inclusive Utility Investment Using Pay As You Save<sup>®</sup> (PAYS<sup>®</sup>), with Examples of Field Experience**

**Presentation invited by Illinois Commerce Commission**

**Stephen Bickel, Director of Utility Policy & Programs**

Partial presentation on June 7, 2022,

Revised for completion on August 10, 2022





# CLEANENERGYWORKS

Clean Energy Works accelerates inclusive investments  
that open the clean energy economy to all.

Deployment of essential energy upgrades, such as those below, depends on **equitable financial solutions**. None of these upgrades are inexpensive for an entire home.

#### EFFICIENCY & DEMAND FLEXIBILITY



Passivehouse insulation, air sealing & duct sealing



ENERGY STAR smart thermostats & water heater load control switch



Advanced power strips



ENERGY STAR lighting



AC coil cleaning



ENERGY STAR home energy management system



ENERGY STAR Appliances



ENERGY STAR storm windows



Water heater wrap & pipe insulation



Low flow fixtures

#### ELECTRIFICATION



ENERGY STAR air source heat pumps



ENERGY STAR heat pump water heaters

#### GENERATION & STORAGE

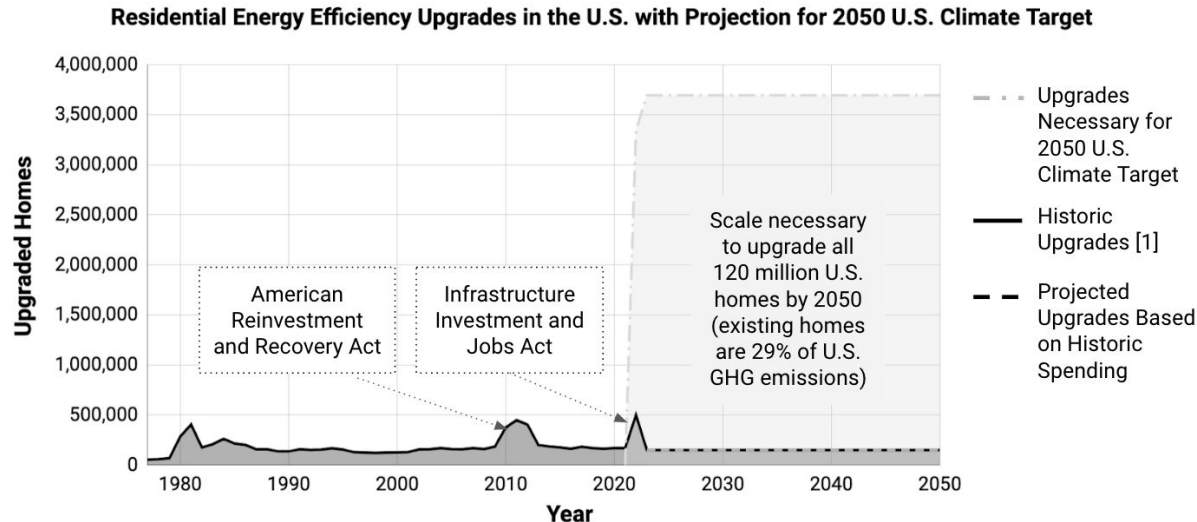


Rooftop solar plus home battery storage



Bi-directional electric vehicle charging station

# Current energy efficiency upgrade funding and financing have created anemic volumes of upgrades



[1] The annual number of residential upgrades funded in the past is estimated by dividing the following funding sources, without subtracting overhead costs that do not directly contribute to upgrades, by the average dollars per upgrade reported for each program: U.S. Department of Energy's Weatherization Assistance Program (WAP); U.S. Department of Health and Human Services' Low-income Home Energy Assistance Program (LIHEAP), specifically 15% of state LIHEAP block grants to fund WAP activities; Utility ratepayer funds collected from ratepayers and transferred to a public benefit fund, WAP state agency, or program run by WAP local agencies; State taxpayer funds from fees or taxes; and U.S. Environmental Protection Agency's Home Performance with ENERGY STAR participant spending.

Hummel, H., J.G. Ferguson, S Bickel. 100% Targets Mean Reaching Everyone: The Imperative for Inclusive Financial Solutions. 2022. ECEEE Summer Study Conference Proceedings (Accepted)

## The volume is anemic because taxpayer and ratepayer funding and consumer finance serve only a tiny fraction of the market need

Eligible households reached with available taxpayer or ratepayer **funding** is limited

- WAP funded 0.3% in 2018
- utility rebates are inequitable
- income verification required

**Everyone else is left without funding or finance and without a one stop shop**

Households that are **qualified** and **willing** to access loans is limited

- LBL found loans have 0.1% max participation
- the process is complex

Forrester, Sydney P., and Tony G. Reames. Understanding the Residential Energy Efficiency Financing Coverage Gap and Market Potential. Applied Energy 260. 2020. 114307. <https://doi.org/10.1016/j.apenergy.2019.114307>. State and Local Energy Efficiency Action Network (SEE Action). (2021). Long-Term Performance of Energy Efficiency Loan Portfolios. Prepared by: Jeff Deason, Greg Leventis, and Sean Murphy of Lawrence Berkeley National Laboratory.



# Illinois is in an advantaged position to benefit from 10 states' insights of experience with the Pay As You Save system of inclusive utility investment

**\$50M** Invested  
as of 2021

**23** Utilities

**10** States

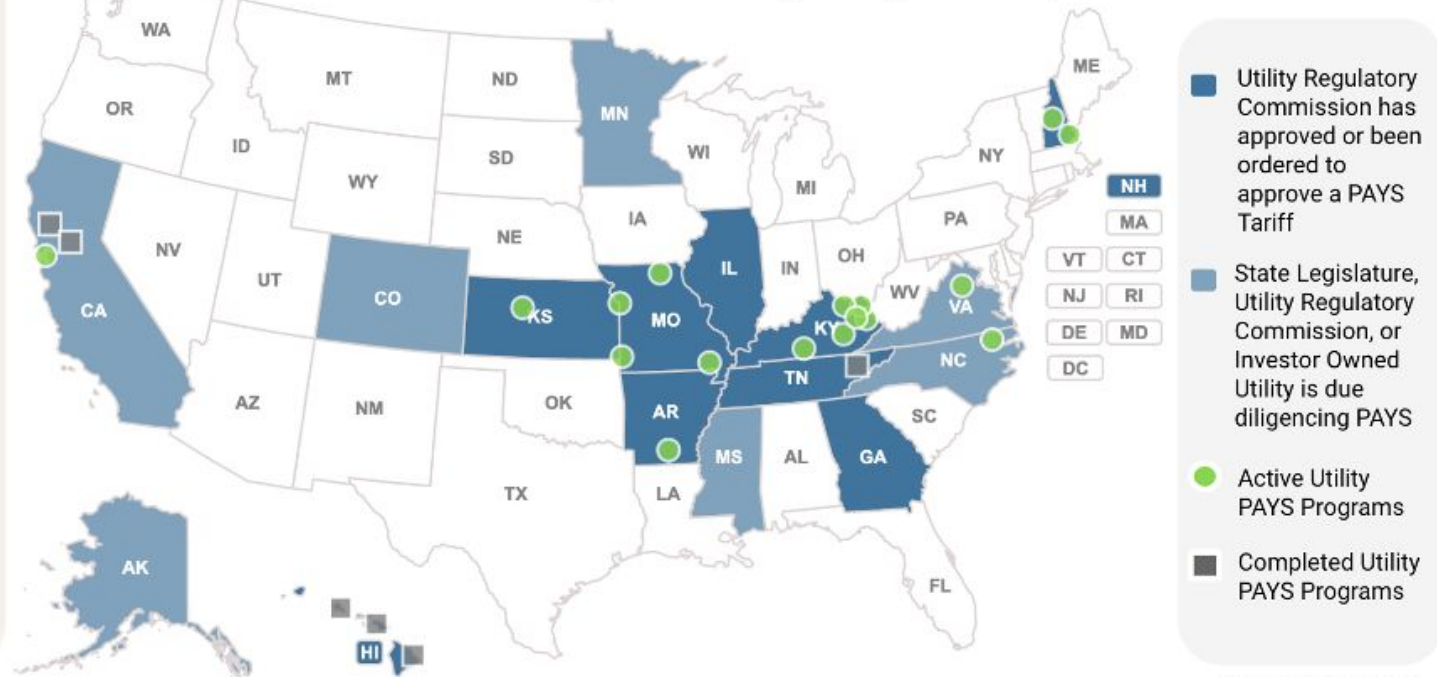
**4,500**  
Single family

**590**  
Multi-family

**700** MUSH

**\$170M** Committed  
through 2023

## Inclusive Utility Investment Using the Pay As You Save System: 2022 U.S. Program and Regulatory Landscape



Source: LibertyHomes

## 2021: EPA announced it would work to accelerate adoption of inclusive utility investment with robust consumer protections



ACCELERATING BUILDING DECARBONIZATION: A WHITE HOUSE ROUNDTABLE  
WITH GOVERNMENT & INDUSTRY



*"We are working on accelerating emerging models of success at expanding the scale of efficiency deployment in underserved and overburdened communities, such as...  
**inclusive utility investment approaches with robust consumer protections**  
**like the Pay As You Save® (PAYS®) model.**"*

**EPA Administrator Michael Regan**  
**White House Roundtable on Accelerating Building Decarbonization with**  
**Government and Industry**

Source: [White House](#), [EPA](#)

# 2022: EPA launches a new resource hub for Inclusive Utility Investment in conjunction with the launch of ENERGY STAR's building decarbonization upgrade program



Home » Energy Efficient Products » Inclusive Utility Investment

## Inclusive Utility Investment

### Expanding access to deep energy efficiency and electrification upgrades

Increasing access to deep energy efficiency and electrification retrofits across all households is critical to addressing energy inequity in the United States and solving the global climate crisis. Inclusive Utility Investment is one promising approach to expanding access to deep energy efficiency and electrification upgrades for all customers, including those that are often underserved by utility energy efficiency programs.

Inclusive Utility Investment is a proven (yet underutilized) model among Rural Electric Cooperatives, and one that is gaining interest and traction among Investor-Owned Utilities because it combines unique attributes, some of which follow:

- It enables utilities to make site-specific investments in home energy upgrades with site-specific cost recovery,
- It can pay for 100% of energy upgrades estimated to produce immediate net savings,
- It is not a loan program, and all customers are eligible regardless of income, credit standing or status as a homeowner or renter,
- Cost recovery is achieved through a tariffed charge on the utility bill tied to the utility meter rather than an individual, and
- Successor customers at an upgraded site are notified that the cost recovery charge applies automatically to the bill until the utility's costs are recovered.

Source: U.S. EPA, [https://www.energystar.gov/products/inclusive\\_utility\\_investment](https://www.energystar.gov/products/inclusive_utility_investment)




EPA launches ENERGY STAR Home Upgrade and promotes the use of Inclusive Utility Investment. Webinar features PAYS® practitioners including an investor owned utility

## 2021 ENERGY STAR Products Partner Meeting





2022: In keynote remarks to the **ACEEE Finance Forum**, the Dept of Energy's Senior Advisor for Energy Justice in the Office of Economic Impact and Diversity called for inclusive utility investments



The slide features a green background with silhouettes of diverse people. In the top right corner, there is a small video inset of Tony Reames, a man with glasses and a beard, wearing a suit and tie. The main title is in large white text. Below the title, the speaker's name and the event details are listed. At the bottom left is the U.S. Department of Energy logo, and at the bottom right is the text for the Office of Economic Impact and Diversity.

# Bridging the Gap: Ensuring Access to Energy Efficiency for All

Tony G. Reames, PhD, PE  
ACEEE Energy Efficiency Finance Forum  
May 25, 2022

U.S. DEPARTMENT OF  
**ENERGY**

OFFICE OF  
**ECONOMIC IMPACT AND DIVERSITY**

<https://youtu.be/k-QVUYzjdVo>

<https://www.aceee.org/2022-energy-efficiency-finance-forum>



What is the Pay As you Save<sup>®</sup> form of inclusive utility investment?

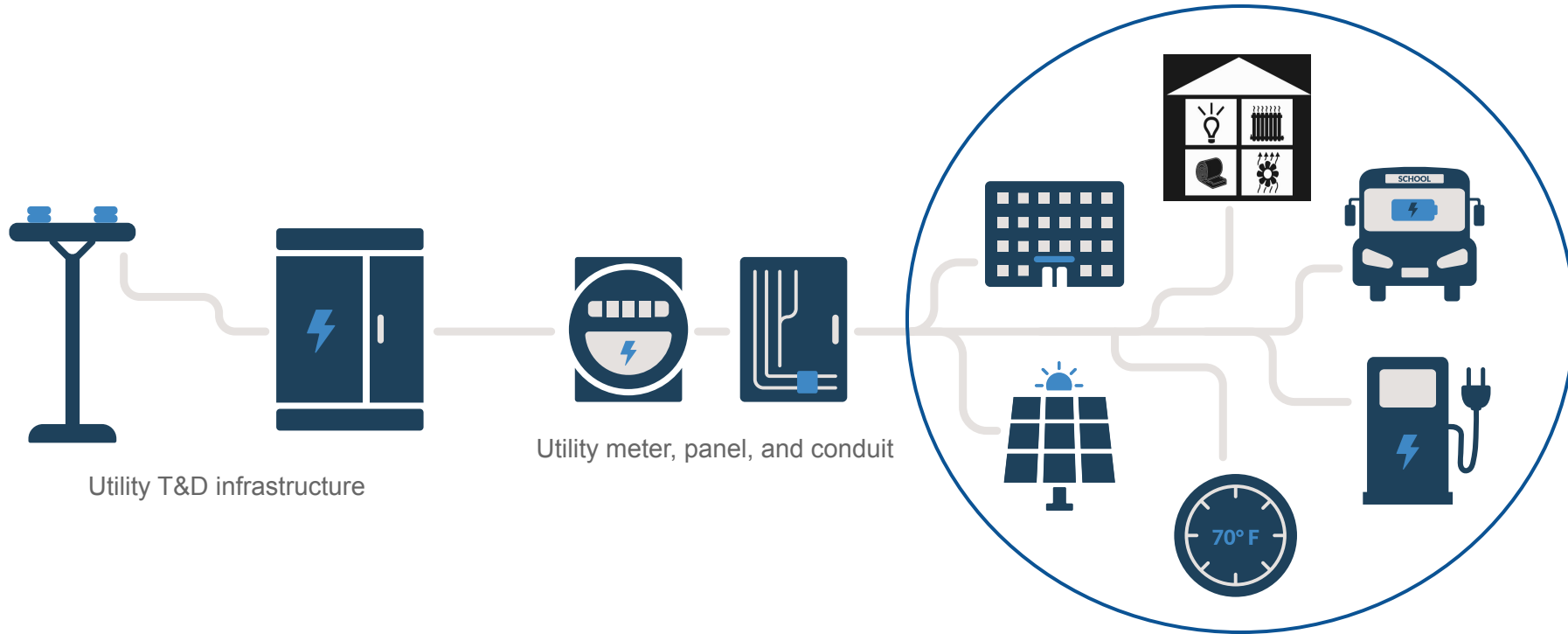
## ● Introduction to an inclusive utility investment program using the Pay As You Save system



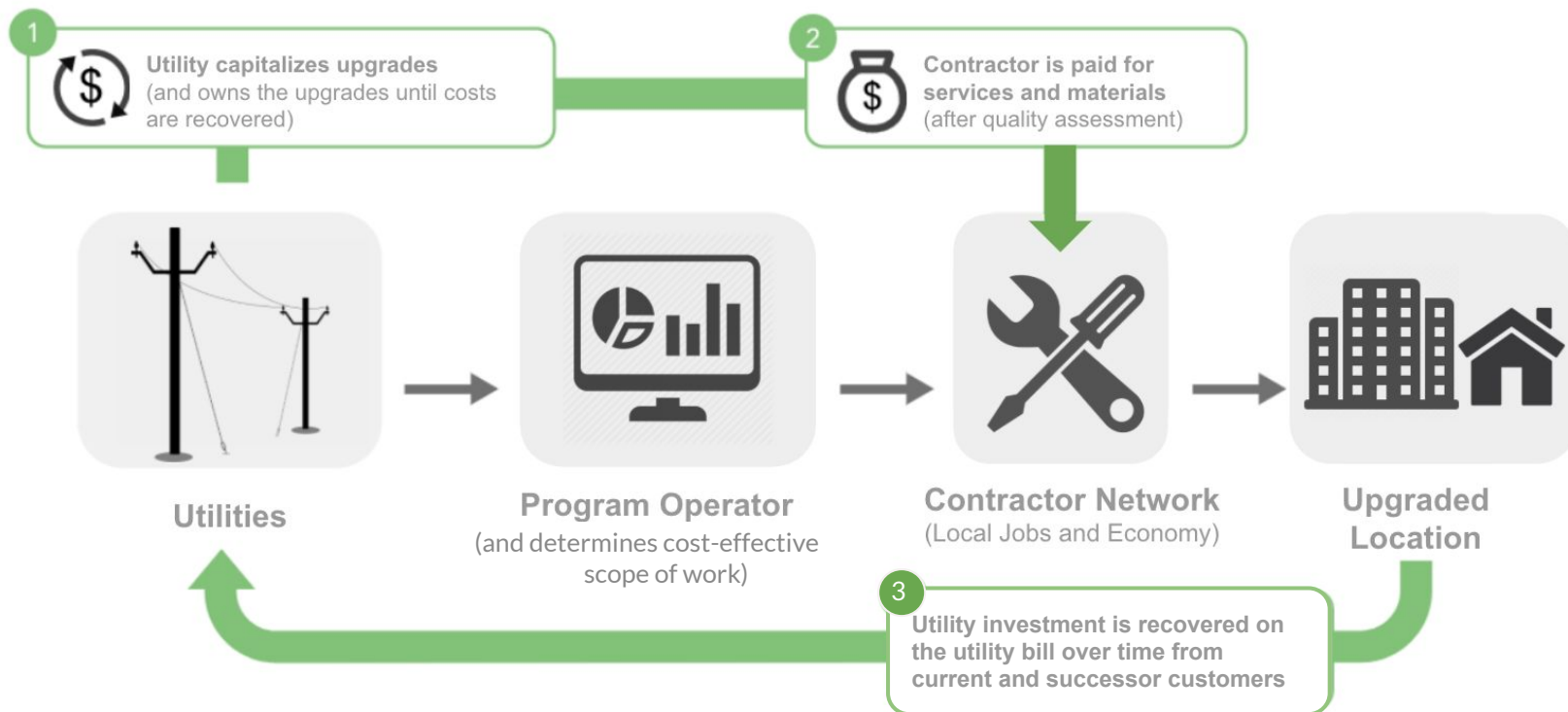
<https://www.youtube.com/watch?v=rNEWa15t7v0&feature=youtu.be>

Runtime: 90 seconds

## PAYS enables utilities to make site-specific investments in a range of clean energy technologies on the customer side of the meter

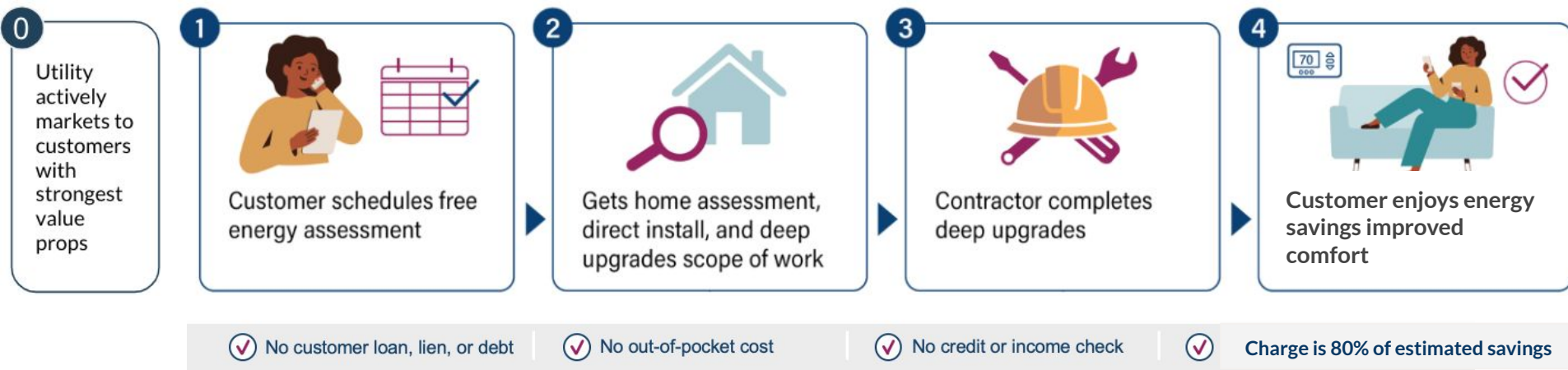


## With PAYS investment dollars flow from the utility to the contractor and are recovered on the utility bill



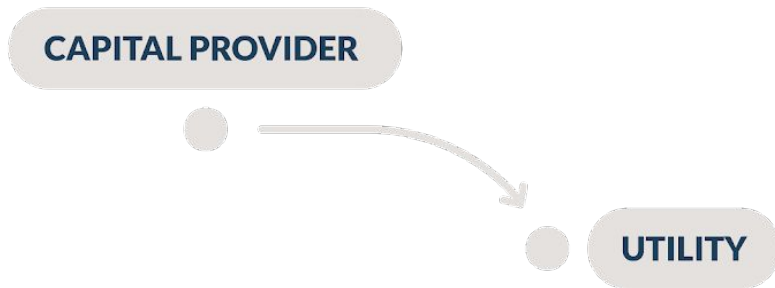


## Participant journey: Inclusive utility investment through Pay As You Save<sup>®</sup>

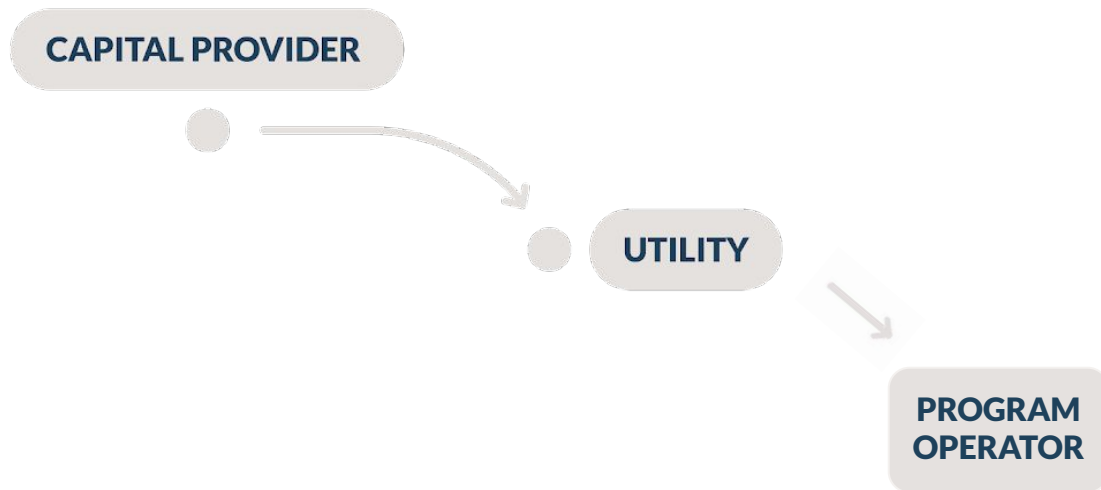


Source: CEW modification of Slipstream graphic based on the original from LibertyHomes

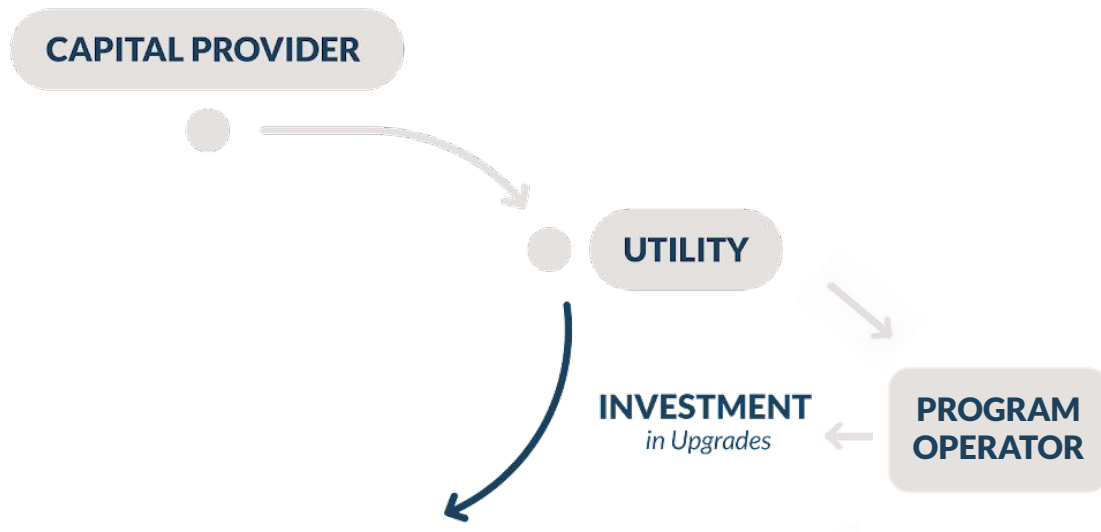
- Utility investment via PAYS<sup>®</sup>: The utility acquires money from a capital source



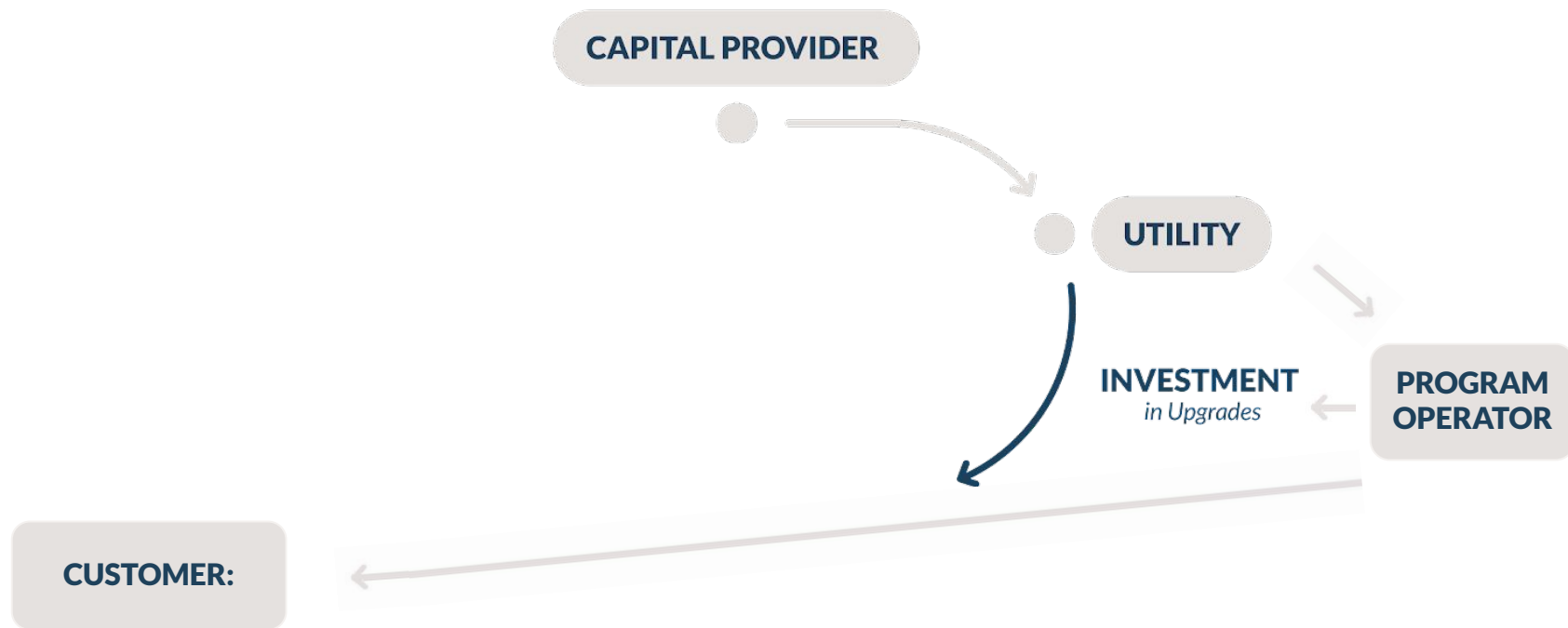
- The utility hires a program operator to oversee the program



The program operator determines what investments will be cost-effective at a specific location and creates a scope of work

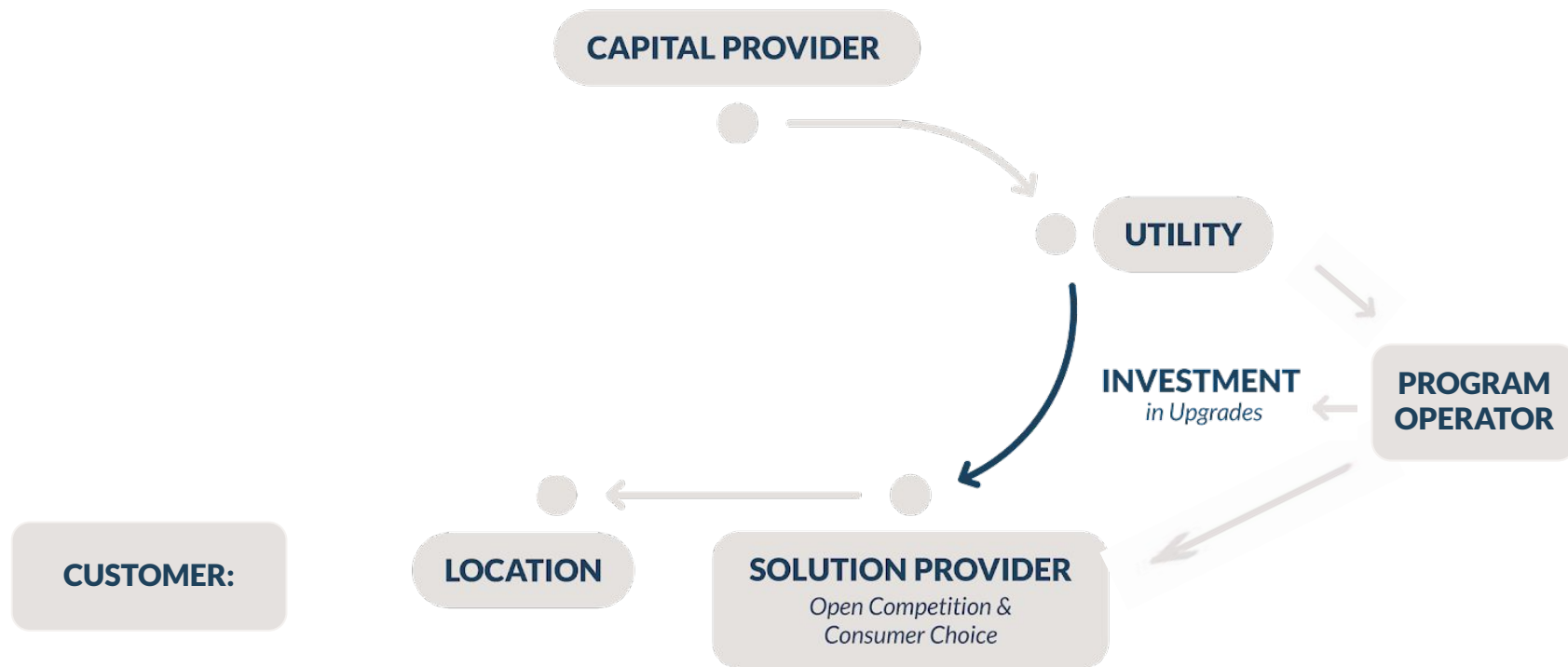


The current customer signs a voluntary tariff agreement specifying the scope of work, cost of upgrade, estimated savings, monthly charge, and duration of cost-recovery

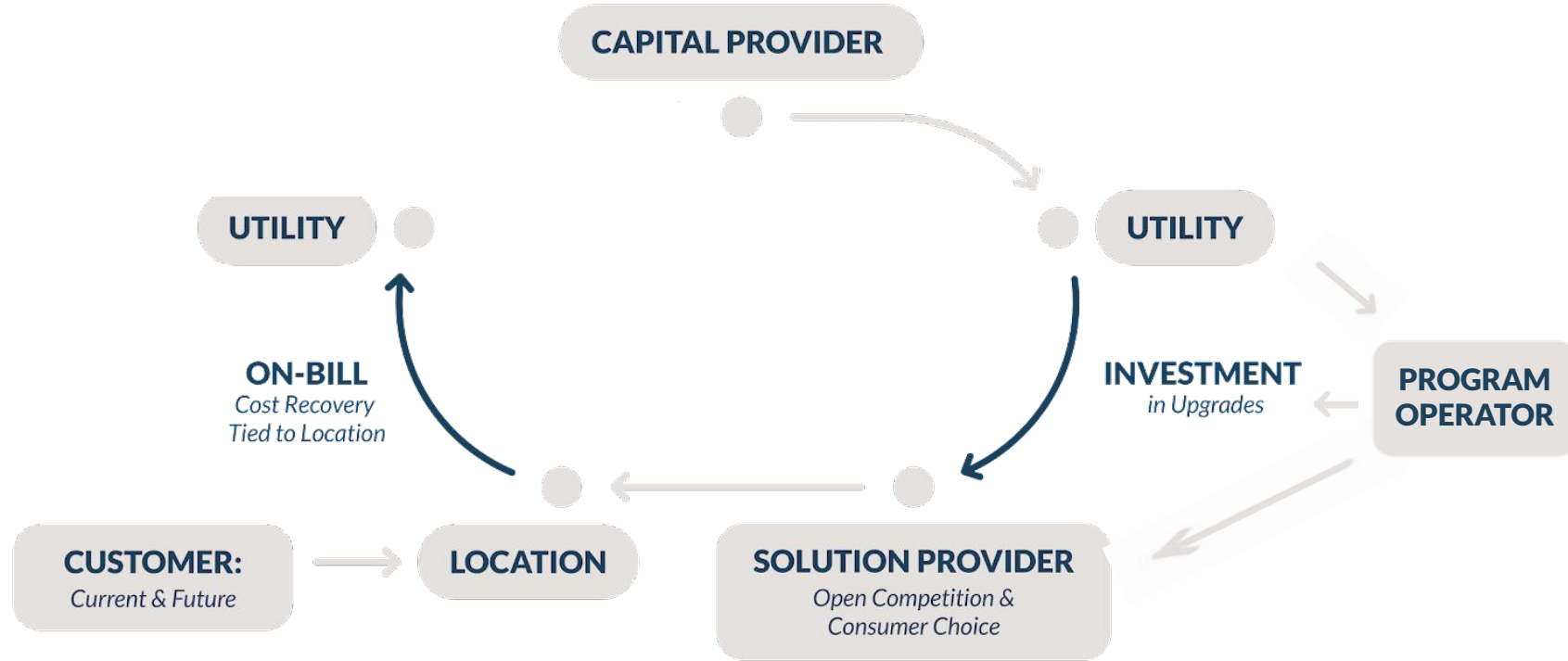




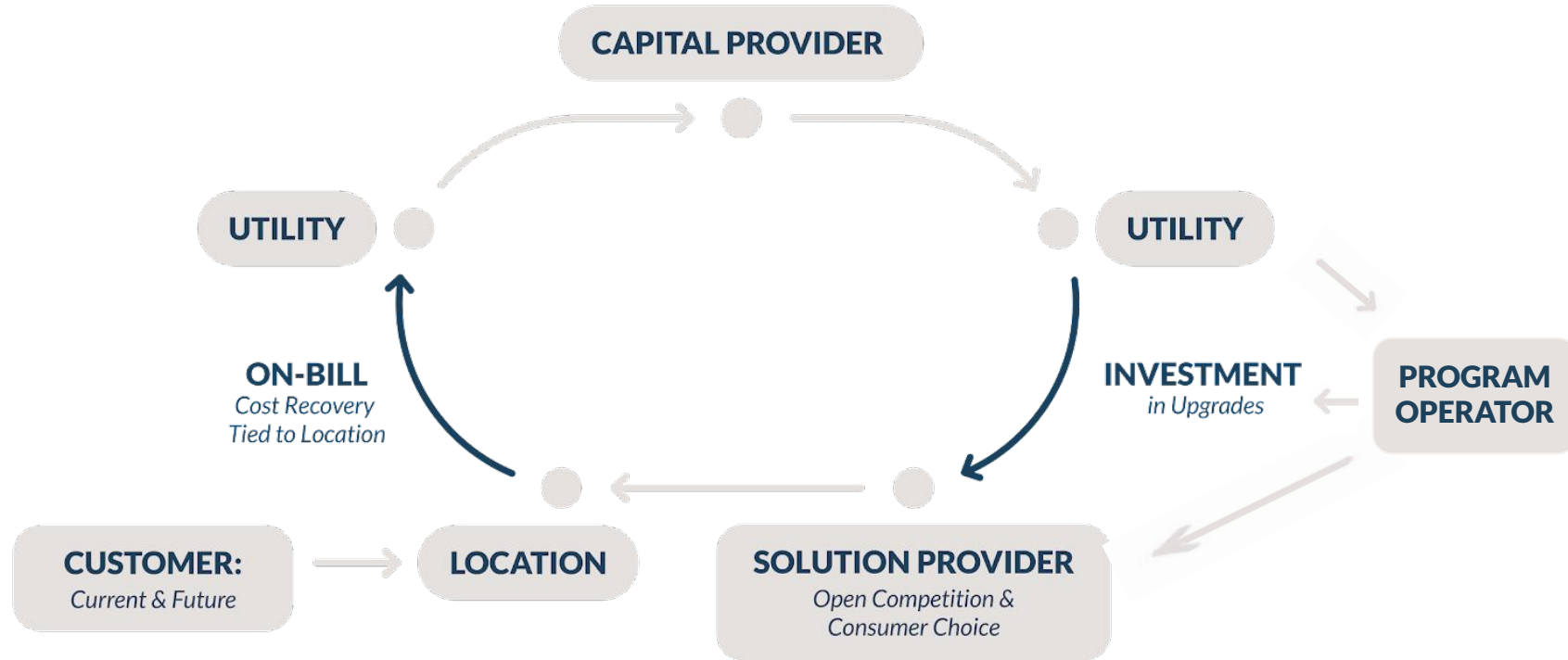
The utility invests in upgrades based on the savings opportunity at the location and pays the solution provider directly when notified by the program operator that the scope of work has been completed



The utility recovers its investment on-bill from both current and future customers occupying the location via the voluntary tariff agreement

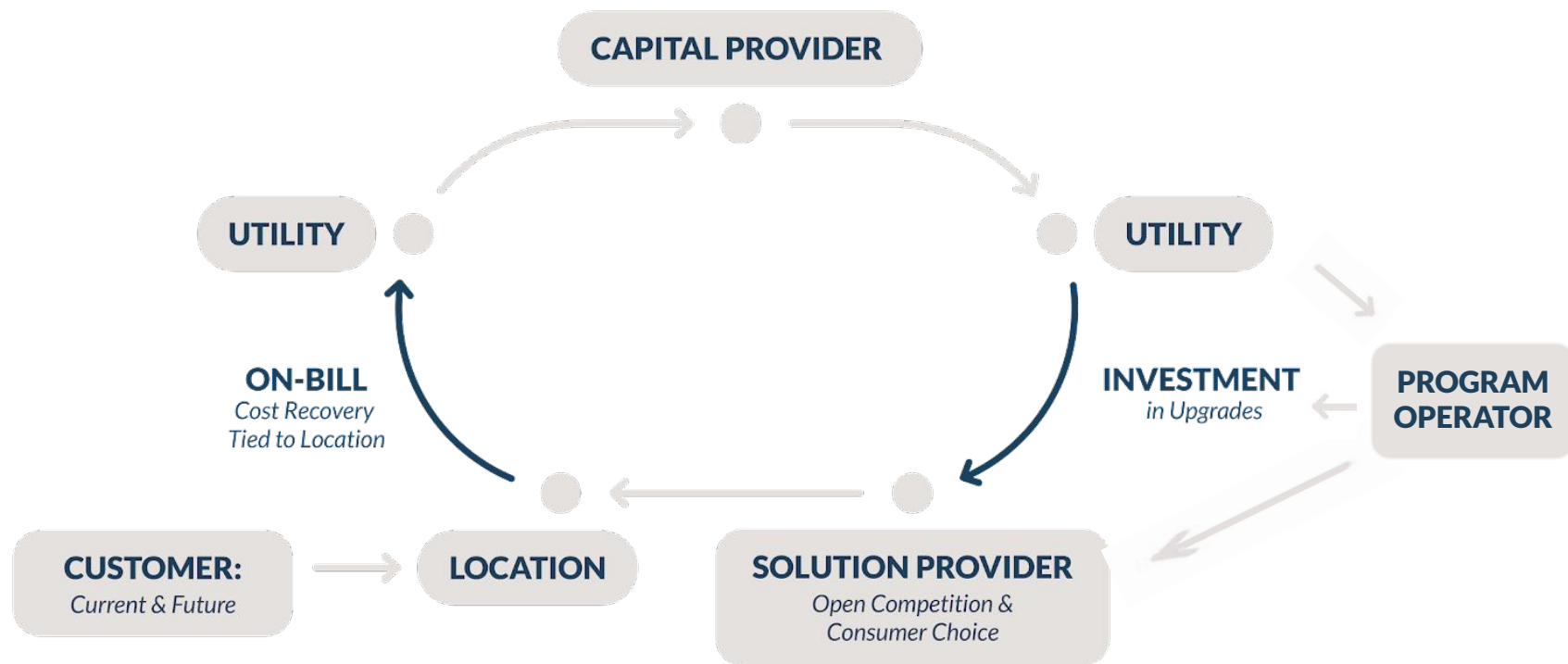


## The utility repays the capital provider

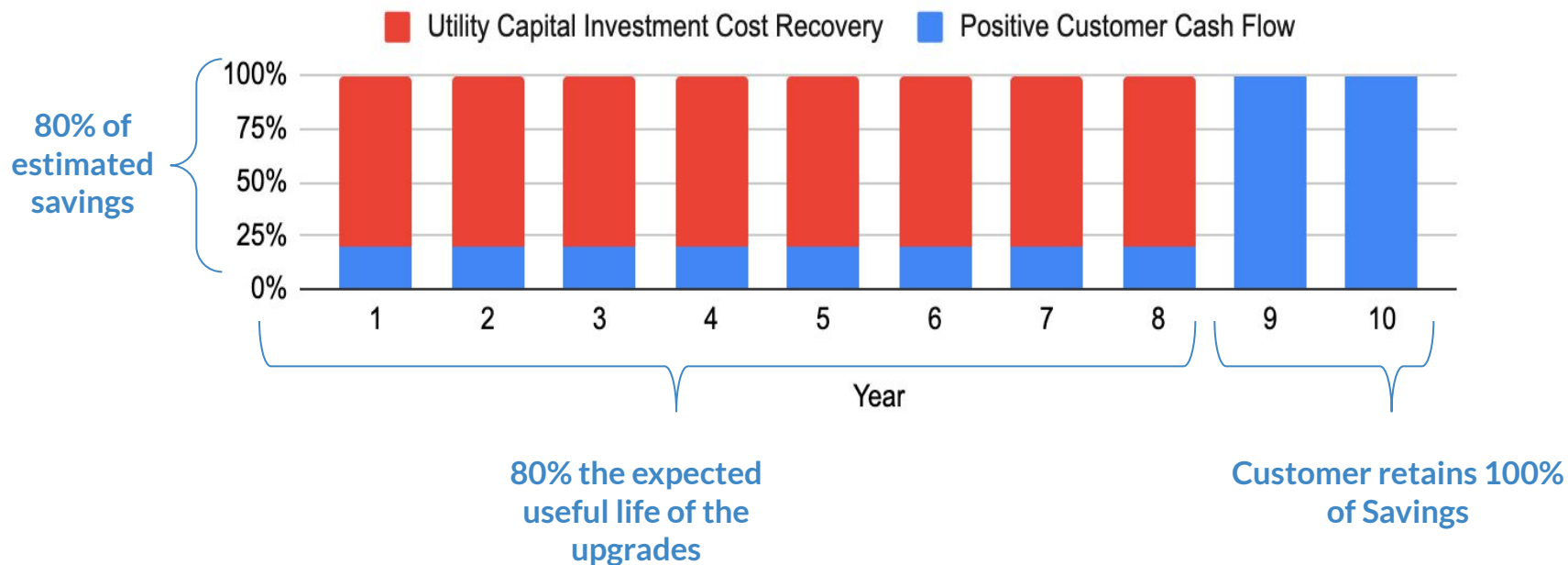


pays the solution provider for energy upgrades at the customer site.

- without eligibility criteria based on income, credit score, or homeowner status. It recovers its cost with a charge on the bill that is less than the estimated savings.

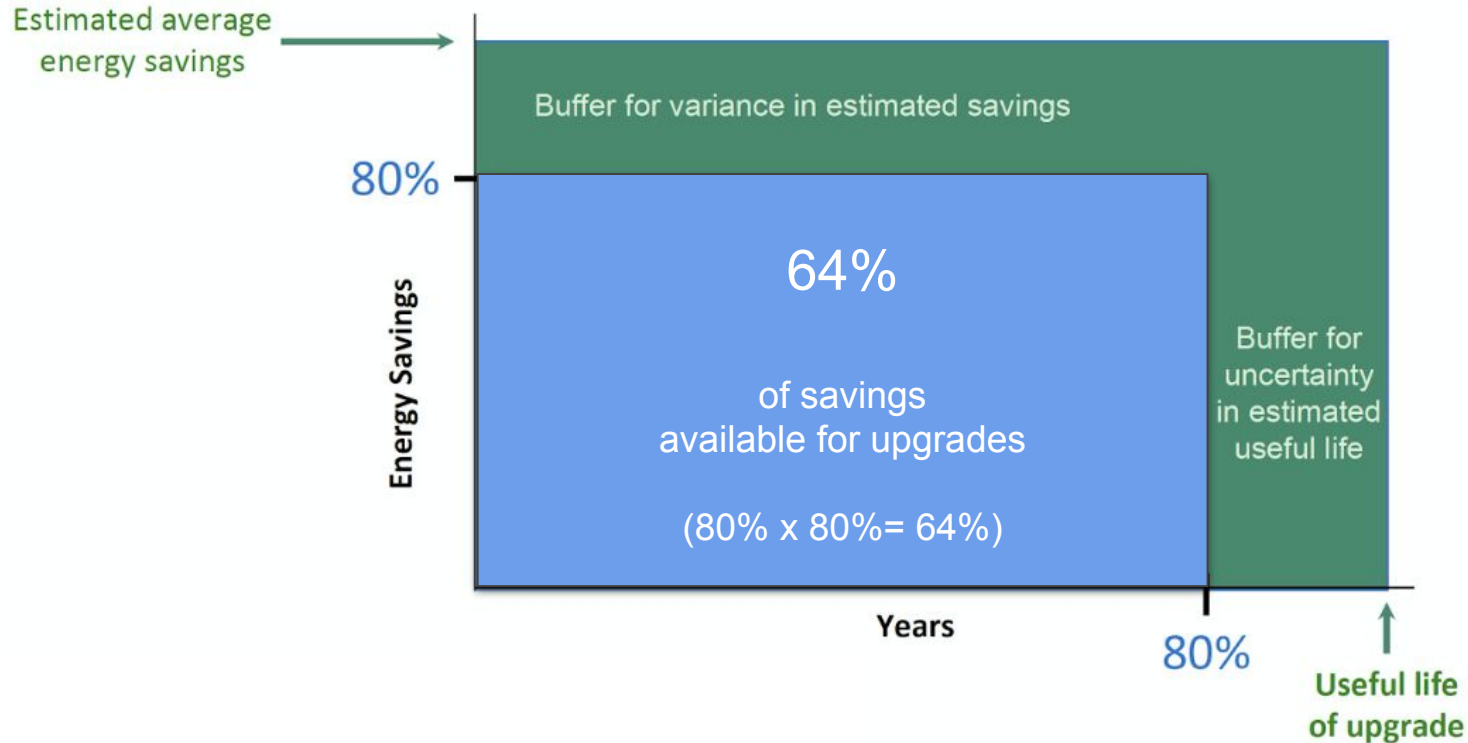


## The fixed fee is capped at 80% of the estimated savings, for 80% of the lifetime of the upgrades





## The PAYS “80% rule” is designed to buffer for variance and uncertainty



## PAYS is not a loan: It includes consumer protections and expansive inclusivity that helped generate high rates of access and participation

Attributes	On-Bill Loan	PAYS® Tariff	R-PACE
• No upfront participant cost	✓	✓	✓
• No credit or income qualification required		✓	
• Renters are eligible		✓	
• Estimated savings must exceed cost recovery charges		✓	
• Participant accepts an opt-in utility tariff tied to the location		✓	
• Cost recovery is through a fixed charge on the utility bill	✓	✓	
• Payments end if upgrade fails and is not repaired		✓	
• Cost recovery runs with the location and remains in effect for subsequent customers at that site until cost recovery is complete		✓	

## Inclusive utility investment program operation best practices

1. Site data collected by utility staff (not the trade allies making the improvements) documented via geocoded time-stamped photographs
2. Use of 3rd party validated energy estimation software, calibrated at each site with 12 months of historical billing data
3. Scope of site specific upgrades is prepared by expert user of software for energy savings and cost effectiveness
4. 100% real-time remote quality assurance via geocoded time-stamped photographs
5. Volume pricing for equipment and installation
6. Monitoring of forward energy usage to help ensure consumption is in line with expectations and to identify anomalies.
7. When an anomaly is discovered and is not due to occupant choices, programs include a consumer protection protocol that remedies the problem at no cost to the participant.

Utility  
M&V

## High offer acceptance rates result from the combination of the PAYS system and program operation best practices resolve barriers to adoption of energy efficiency

Little natural demand for EE	<b>Irrelevant</b>	Utility offer doesn't require consumer demand
Upfront capital requirement	<b>None</b>	Utility capitalizes all or most of upgrades
Poor credit	<b>Irrelevant</b>	Evaluating Site Energy Performance
Risk of savings not covering repayment cost	<b>None</b>	80% Rule
Need to find and supervise the contractor	<b>None</b>	That's what the Program Operator is For
Need to apply for rebate	<b>None</b>	Automatically Added to Upgrade
Challenges with transferring obligation	<b>None</b>	Tied to Metered-Location, NOT Person
Landlord/tenant split incentive	<b>None</b>	Tenant Savings Pay for Upgrade
Free riders	<b>None</b>	Site-specific Investment & Cost Recovery
Is it a reasonable price	<b>Assured</b>	Volume Pricing & Cost Effective SOW
Contractor fraud	<b>Controlled</b>	QA/QC & Financial Obligation to Repair

## Customer objectives and incentives are better aligned with the utility's than with the service provider

	Customer	Utility	Service Provider
Compensation	N/A	Per completed job	Total job cost
Scope	Cost-effective	Cost-effective	Maximal
Cost	Minimum	Minimum	Maximum attainable
Efficiency	Highest cost-effective	Highest cost-effective	Lowest cost
Installation quality	Highest	Highest	Minimum to avoid immediate call-backs



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What is the field experience with Pay As You Save<sup>®</sup>?

## PAYS superior performance compared to loans has a multiplier effect that is reflected in field experience



## Field experience reported by utilities with experience using the Pay As You Save system

	Cooperative Utilities	Municipal Utilities	Investor Owned Utilities
Project types	Single family, Multifamily	Single family, Multifamily	Single family, Multifamily, Municipal
Upgrade package	Weatherization, HVAC, demand response	Indoor/outdoor water efficiency	Weatherization, HVAC, Solar thermal
Projects completed	4,005	650	1,239
Customers reached per year	0.6%	1%	Not available
Participant adoption rate among those receiving an offer	83%	23%	Not available
Average package size (rounded)	\$7,100	\$750	\$7,500 (\$4,900-\$21,000)
Average cost recovery term (years)	10	9	10
Charge offs	0.1%	<0.1%	0.1%

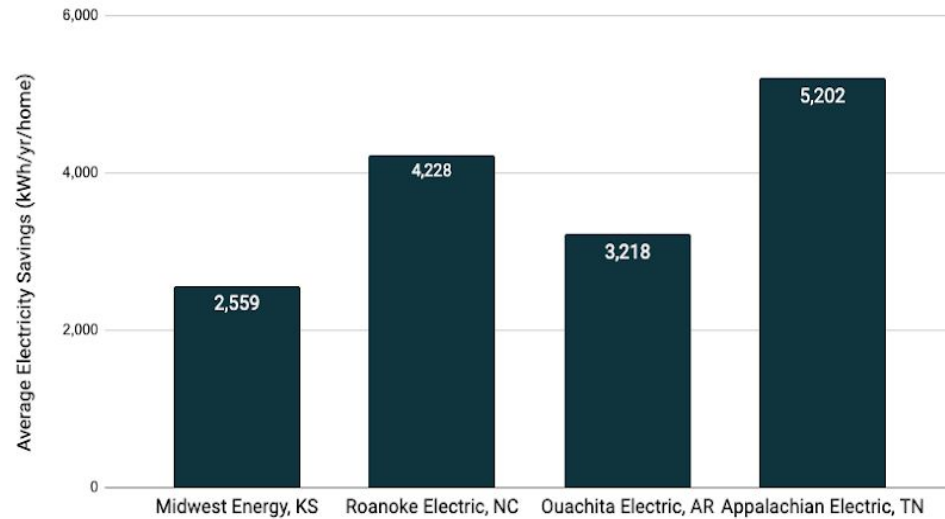
-vs- <0.1% max loan penetration

-vs- <10% loan close rate

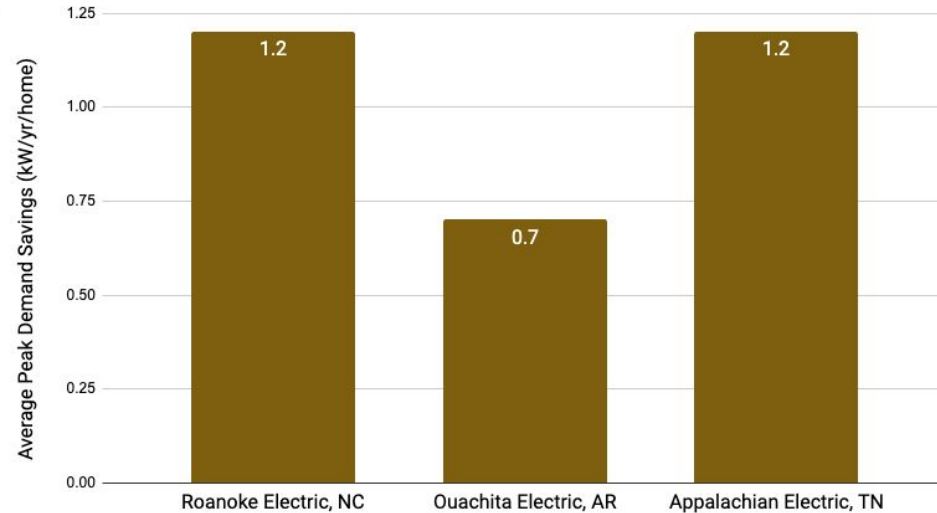
-vs- ~5% default rate on Tier 1 consumer credit (KBRA)

# Utilities' PAYS programs have produced significant electricity and peak demand savings to the utility

Average Electricity Savings Per Home from Utility PAYS® Home Upgrades

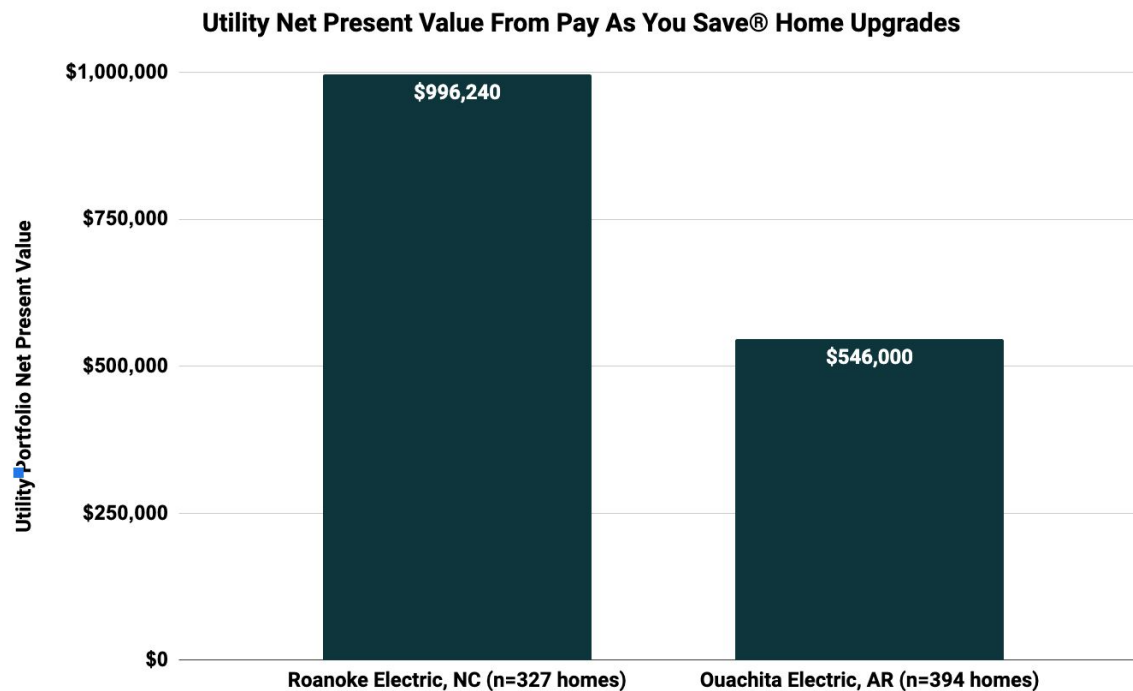


Average Peak Demand Savings Per Home from Utility PAYS® Home Upgrades



Ferguson, Jill Grey, S. Bickel, H. Lachman, P.A. Cillo, H. Hummel. Pay As You Save System of Inclusive Utility Investment for Building Efficiency Upgrades: Reported and Evaluated Field Experience in the United States. 2022 ECEEE Summer Study Proceedings (accepted); 2022.

## Electricity and peak demand savings have produced significant value the utility

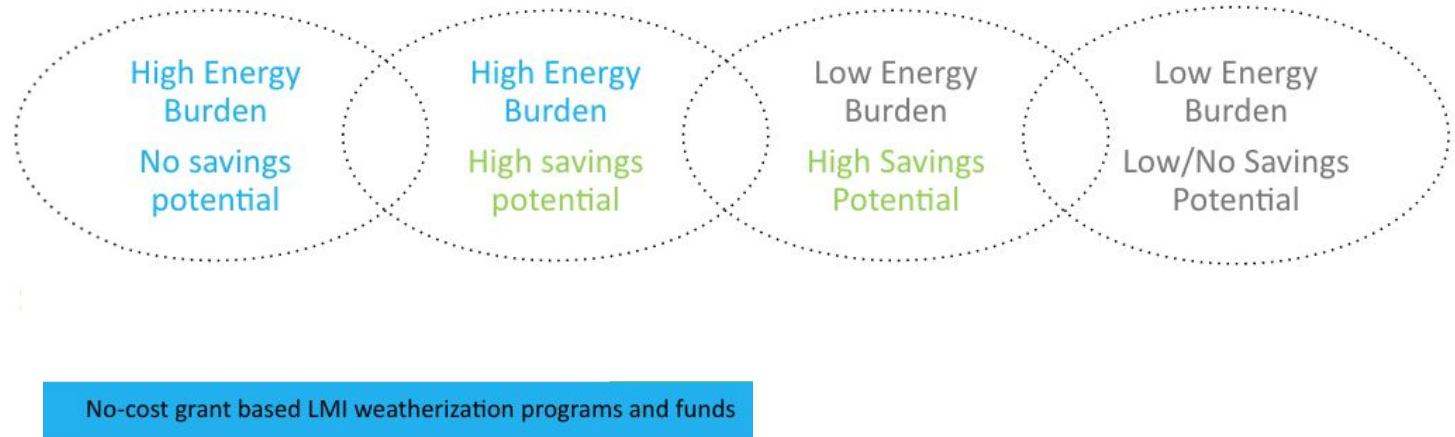


Ferguson, Jill Grey, S. Bickel, H. Lachman, P.A. Cillo, H. Hummel. Pay As You Save System of Inclusive Utility Investment for Building Efficiency Upgrades: Reported and Evaluated Field Experience in the United States. 2022 ECEEE Summer Study Proceedings (accepted); 2022.

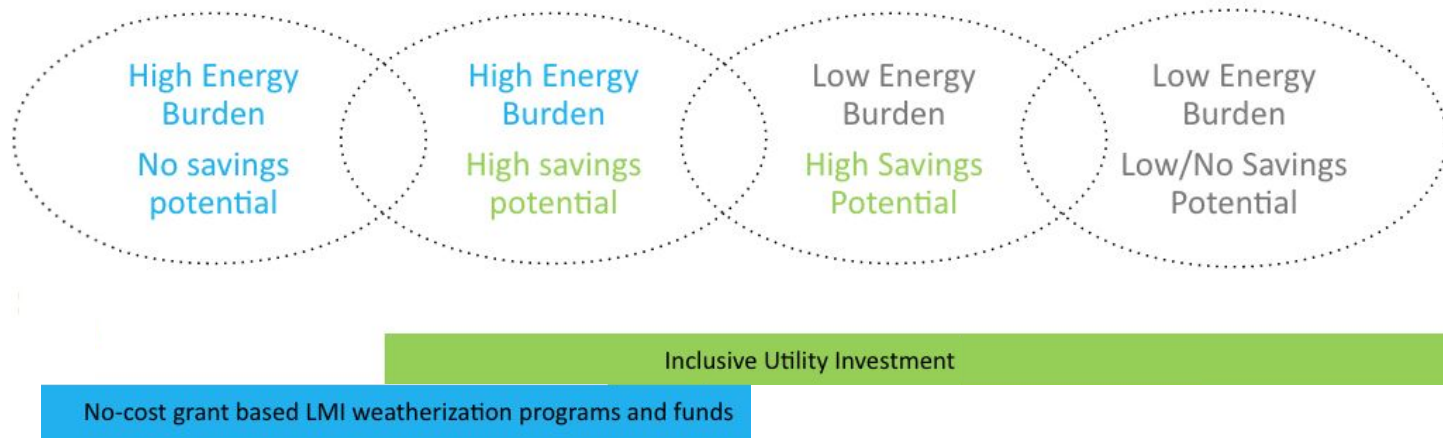
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Field experience shows that  
inclusive utility investment is not a panacea.

Inclusive utility investment alone is not a substitute for no-cost weatherization programs because they have the potential to reduce energy burdens faster and to help households afford to buy more energy for healthier indoor temperatures.



## Pay As You Save inclusive utility investment can be a powerful complement to expand financial flows for more upgrades



### NEW EPA Case Study

Case Study: Making Energy Efficiency Upgrades More Accessible -  
Leveraging Inclusive Utility Investments with the Kansas Weatherization Assistance Program



## Unfortunately many homes are deferred from both Weatherization and PAYS programs due to health and safety dangers and structural damage that must be addressed first

Location	Program type	Deferred for health and safety, and/or structural problems
Connecticut <sup>1</sup>	Income Eligible, Wx	23%
Connecticut <sup>1</sup>	Market rate, HES	14%
Vermont <sup>2</sup>	Income Eligible, Wx	10%
Virginia <sup>2</sup>	Income Eligible, Wx	18%
Washington <sup>2</sup>	Income Eligible, Wx	>30%
Roanoke Electric Coop, NC <sup>3</sup>	Inclusive, PAYS (persistent poverty counties)	~55%
Georgia Power IQTBEE Pilot <sup>3</sup>	Income Eligible, UI	~80%
LaGrange, GA, SOUL <sup>1</sup>	Income Eligible, UI	~80%

(Wx=Weatherization, HES = Home Energy Solutions, PAYS= Pay As You Save®, UI = Utility Investment)

<sup>1</sup> Energy Futures Group. Presentation at the CT Weatherization Barriers Workshop, November 18, 2020

<sup>2</sup> E4TheFuture, [Weatherization Barriers Toolkit: How to Address Health and Safety Barriers with an Income-Eligible Focus](#). Presentation slide deck. June 6, 2022.

<sup>3</sup> Tammy Agard, CEI of program operator EEtility, personal communication, June 1, 2022.

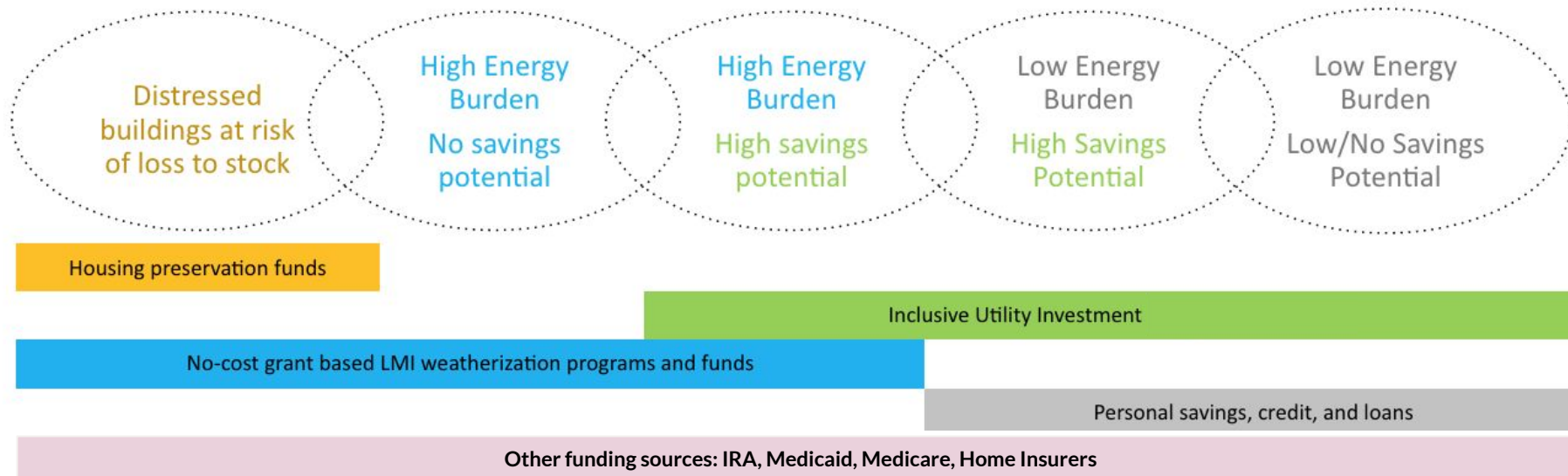
### Deferral causes


- Asbestos/vermiculite
- Mold
- Pests
- Roof damage
- Wall damage
- Cracked foundations

### Deferral costs

- VA average deferral est. cost: \$5,000-\$8,000
- CT average remediation cost \$20,000

These barriered homes are **also at risk of loss to the housing stock** and should be priorities for housing preservation, which would unbarrier them





## Resources for stakeholders to the development of CEJA's Equitable Energy Upgrade Program

## Equitable Energy Upgrade Program statutory language draws on open source knowledge

(e) In the design of the Program, the Commission shall:

(2) **Establish Program guidelines for implementation of the Program in accordance with the Pay As You Save Essential Elements and Minimum Program Requirements** that electric utilities must abide by when implementing the Program. Program guidelines established by the Commission shall include the following elements:

(B) Customer protection guidelines should be **designed consistent with Pay As You Save Essential Elements and Minimum Program Requirements**.

(k) The Program **should be modeled after the Pay As You Save system**, by which Program participants finance energy projects using the savings that the energy project creates with a tariffed on-bill program. Eligible projects shall not create personal debt for the customer, result in a lien in the event of nonpayment, or require customers to pay monthly charges for any upgrade that fails and is not repaired within 21 days. The utility may restart charges once the upgrade is repaired and functioning and extend the term of payments to recover its costs for missed payments and deferred cost recovery, providing the upgrade continues to function.

## For more information, visit the EPA's resource hub for inclusive utility investment



Home » Energy Efficient Products » Inclusive Utility Investment

### Inclusive Utility Investment

#### Expanding access to deep energy efficiency and electrification upgrades

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EPA launches ENERGY STAR Home Upgrade and promotes the use of Inclusive Utility Investment. Webinar features PAYS<sup>®</sup> practitioners including an investor owned utility

#### 2021 ENERGY STAR Products Partner Meeting



# Public domain: Essential Elements & Minimum Requirements for Pay As You Save, courtesy of Energy Efficiency Institute, Inc., and the full set is printed here:

## **PAYS® ESSENTIAL ELEMENTS & MINIMUM PROGRAM REQUIREMENTS**

December 31, 2020 (updated July 20, 2021)

The Energy Efficiency Institute (EEI) owns the Pay As You Save® and PAYS® trademarks, which are registered with the U.S. Patent and Trademark Office. EEI does not charge for the use of these trademarks and allows for their use only to identify resource efficiency programs that EEI determines meet these PAYS Essential Elements and Minimum Program Requirements.

### **A. A program based on PAYS® has these essential elements:**

1. A fixed monthly tariffed charge assigned to a location, not to an individual customer;
2. Payment on the utility bill with utility cost recovery on the same terms as their other essential utility services; and
3. Independent certification that products are appropriate and [savings](#) estimates exceed payments in both the near and long terms.

### **B. A program based on PAYS® has these minimum program requirements:**

#### **Offer**

1. The offer to customers is not burdened with customer risk, which undermines the offer's attractiveness to customers, results in fewer completed projects, and reduces the program's effectiveness in achieving its goals. PAYS upgrades and the associated monthly charge must not entail new debt or liens for the participant.
2. PAYS offers will not be forced to compete with other utility offers. A utility offering rebates, for example, as well as implementing a program using the PAYS system will offer the same rebates to participants of all their programs. However, a utility cannot use the requirements of other offers to limit PAYS program offers or participation.

#### **Upgrades**

1. PAYS upgrades must use properly installed, reliable technologies that are proven to produce savings.
2. Once the utility has recovered all of its investment in upgrades at a location, ownership of the upgrades will transfer to the building owner at that time without any additional financial obligations. Upgrades may not be repossessed.
3. If upgrades stop working, monthly charges must stop until the upgrades are repaired and working again. Charges are also suspended for vacancy if the meter is shut off.

4. The amount of the monthly charge will not change for an upgraded location for the duration of utility cost recovery unless one or more measures in an upgrade package fails for reasons other than the owner, customer (if different), or occupants have removed, damaged or failed to maintain it, and it cannot be repaired or replaced. In this case, the charge will be reduced if the remaining package would have originally qualified for the tariff; if not, the charge will be eliminated completely.
5. Repair costs or the costs associated with deferred collections from vacancy may be recovered by extending the duration of charges at a location for as long as needed, but not beyond when the upgrades are functioning and producing savings.

#### **Cost-effectiveness analyses**

1. Cost effectiveness must be based on [site- and building-specific analysis](#) at a location, use actual installation costs, and include no inflation rate.
2. When calculating the monthly charge and copay amount for an upgraded location, utilities must use estimates of all significant annual resource savings the participant will receive (e.g., water, sewer, electricity, gas, and oil) from upgrades installed at that location.
3. Utility subsidies and state and federal credits may be included in cost-effectiveness analyses only if they lower the payment to the installing contractor, assuring a fair monthly charge is passed along to successor customers.

#### **On-bill charges**

1. The monthly charge for a location must be set so that the amount a residential or commercial participant pays annually is not more than 80 percent of the upgrades' estimated annual savings based on current retail rates and the payment term is not more than 80 percent of the estimated life of the shortest-life measure of an upgrade package or the term of a full parts and labor warranty/insurance policy on the upgrades (80 percent rule).
2. Charges are binding on the participant and all successor customers at the upgraded location until they have fulfilled all their obligations and are no longer a customer at the location or until utility cost recovery is complete.
3. Each month, the utility must pay the capital provider(s) the amount billed to PAYS customers, regardless of the utility's collections, and treat PAYS uncollectibles the same as it treats all other uncollectibles.
4. Pre-payment of unbilled charges is not permitted because the participant will not yet have the savings to cover this payment.
5. Whenever possible, the implementing utility must file notice with the property records for the upgraded location of the benefits and obligations of the upgrades to ensure buyers of the property are notified.



# Public domain: Model Tariff for Pay As You Save, created by Energy Efficiency Institute, Inc.

## PAY AS YOU SAVE® MODEL TARIFF

- 1 **Eligibility:** Eligible on an optional and voluntary basis to any customer who takes service under any rate schedule for energy efficiency improvements (upgrades) where the utility provides electric service to the structure. It shall not be a requirement that the structure be all-electric.
- 2 **Participation:** To participate in the Program, a customer must: 1) request from the utility an analysis of cost-effective upgrades; 2) agree to the terms of the cost-effectiveness analysis fee as described in Section 3.4; and 3) sign the Efficiency Upgrade Agreement, which defines customer benefits and obligations, and implement any project that does not require an upfront payment from the customer as described in Section 3.3.
- 2.1 **Ownership:** If the customer is not the building owner, the building owner must sign an Owner Agreement, agreeing to not remove or damage the upgrades, to maintain them, and to provide notice of the benefits and obligations associated with the upgrades at the location to the next owner or customer before the sale or rental of the property.
- 2.2 **Notice:** The owner must agree as part of the Efficiency Upgrade Agreement (if the owner is the customer) or Owners Agreement to have a Notice attached to their property records. Failure to obtain the signature on the Notice Form of a successor customer who is renting the premises or a purchaser, in jurisdictions in which the utility cannot attach the Notice to the property records, indicating that the successor customer received notice will constitute the owner's acceptance of consequential damages and permission for a tenant or purchaser to break their lease or sales agreement without penalty.
- 3 **Energy Efficiency Plans:** The utility will have its Program Operator or approved energy efficiency contractor perform a cost-effectiveness analysis and prepare an Energy Efficiency Plan (Plan) identifying recommended upgrades to improve energy efficiency and lower power costs.
- 3.1 **Incentive Payment:** The utility may reduce the upgrade cost with an incentive payment for program participation that is less than or equal to the value of the upgrades to the utility or a rebate that is available to any customer who installs a specific improvement.
- 3.2 **Net Savings:** Recommended upgrades shall be limited to those where the annual Program Service Charges (Service Charges), including program fees and the utility's charges for capital, are no greater than 80% of the estimated annual savings to a participating customer based on current retail rates for electricity and/or gas.
- 3.3 **Copy Option:** In order to qualify a project that is not cost effective for the Program, customers may agree to pay the portion of a project's cost that prevents it from qualifying for the Program as an upfront payment to the contractor. The utility will assume no responsibility for such upfront payments to the contractor.
- 3.4 **Cost-Effectiveness Analysis Fee:** If the cost of the cost-effectiveness analysis exceeds the value to the utility of upgrades accepted by customers for installation based on the Utility Cost test, the utility will recover from participants the portion of the cost for the analysis that is greater than the value of the upgrades to the utility. The utility will not recover costs for the analysis if the Energy Efficiency Plan concludes that proposed upgrades are cost effective only with a copy. The utility will recover all of its costs for the analysis at a location from a customer who declines to install upgrades identified in an Energy Efficiency Plan that does not require a copy. Customer costs for analyses, if any, will be recovered from participants by rolling them into Service Charges as described in Section 7.

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- 3.5 **Existing Buildings:** Projects that address upgrades to existing buildings deemed unlikely to be habitable or to serve their intended purpose for the duration of utility cost recovery will not be approved unless other funding can effect necessary repairs. If a building is a manufactured home, it must be built on a permanent foundation and fabricated after 1982 to be eligible.
- 4 **Approved Program Operator:** Utility may operate the program directly with its own staff resources or hire an experienced Program Operator to implement the program.
- 5 **Approved Contractor:** Should the customer decide to proceed with implementing the Plan, the utility shall determine the appropriate monthly Service Charge as described below. The customer shall sign the Agreement and select a contractor from the utility's list of approved contractors.
- 6 **Quality Assurance:** When the energy efficiency upgrades are completed, the contractor shall be paid by the utility, following on-site or telephone inspection and approval of the installation by the utility or its Program Operator.
- 7 **Program Services Charge:** The utility will recover the costs for its investments including any fees as allowed in this tariff through a fixed monthly Service Charge assigned to the location where upgrades are installed and paid by customers occupying that location until all utility costs have been recovered. Service Charges will also be set for a duration not to exceed 80% of the estimated life of the upgrades or the length of a full parts and labor warranty, whichever is greater and in no case longer than twelve years. The Service Charges and duration of payments will be included in the Efficiency Upgrade Agreement.
- 7.1 **Cost Recovery:** No sooner than 45 days after approval by the utility or its Program Operator, the customer shall be billed the monthly Service Charge as determined by the utility. The utility will bill and collect Service Charges until cost recovery is complete except in cases discussed in Section 8. Prepayment of unbilled charges will not be permitted. This facilitates installed upgrades remaining and continuing to function at the location for at least the duration of cost recovery.
- 7.2 **Eligible Upgrades:** All upgrades must have Energy Star certification, if applicable. The utility may seek to negotiate with contractors or upgrade suppliers extended warranties to minimize the risk of upgrade failure on behalf of all customers.
- 7.3 **Ownership of Upgrades:** During the period of time when Service Charges are billed to customers at locations where upgrades have been installed, the utility will retain ownership of the upgrades. Upon termination of the Service Charge, ownership will be transferred to the building owner.
- 7.4 **Maintenance of Upgrades:** Participating customers and building owners (if the customer is not the building owner) must agree, when signing the Efficiency Upgrade Agreement or the Owner Agreement, to keep the upgrades in place for the duration of Service Charges, to maintain the upgrades per manufacturers' instructions, and report the failure of any upgrades to the Program Operator or utility as soon as possible. If an upgrade fails, the utility is responsible for determining its cause and for repairing the equipment in a timely manner as long as the owner, customer, or occupants did not damage the upgrades, in which case they will reimburse the utility as described in Section 8.
- 7.5 **Termination of Service Charge:** Once the utility's costs for upgrades at a location have been recovered, including its cost of capital, the cost paid to the contractor to perform the

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- work, costs for any repairs made to the upgrades as described in Section 8, the monthly Service Charge shall no longer be billed, except as described in Sections 7.7 and 8.
- 7.6 **Vacancy:** If a location at which upgrades have been installed becomes vacant for any reason and electric service is disconnected, Service Charges will be suspended until a successor customer takes occupancy. If a building owner maintains electric service at the location, the building owner will be billed Service Charges as part of any charges it incurs while electric service is turned on.
- 7.7 **Extension of Program Charge:** If the monthly Service Charge is reduced or suspended for any reason, once repairs have been successfully effected or service reconnected, the number of total monthly payments shall be extended until the Service Charges collected equal the utility's cost for installation as described in Section 7, including costs associated with repairs, deferred payments, and missed payments as long as the current occupant is still benefiting from the upgrades.
- 7.8 **Tied to the Location:** Until cost recovery for upgrades at a location is complete or the upgrades fail as described in Section 8, the terms of this tariff shall be binding on the metered structure or facility and any future customer who shall receive service at that location.
- 7.9 **Disconnection for Non-Payment:** Without regard to any other Commission or utility rules or policies, the Service Charges shall be considered as an essential part of the customer's bill for electric service, and the utility may disconnect the metered structure for non-payment of Service Charges under the same provisions as for any other electric service. If service is disconnected for customers on pre-paid payment plans, Service Charges will be pro-rated by the day.
- 8 **Repairs:** Should, at any future time during the billing of Service Charges, the utility determine that the installed upgrades are no longer functioning as intended and that the occupant, or building owner if different, did not damage or fail to maintain the upgrades in place, the utility shall reduce or suspend the Service Charges until such time as the utility or its contractor can repair the upgrades. If the upgrades cannot be repaired or replaced cost effectively, the utility will waive remaining charges.
- If the utility determines the occupant, or building owner if different, did damage or fail to maintain the upgrades in place as described in Section 7.4, it will seek to recover all costs associated with the installation, including any fees, incentives paid to lower project costs, and legal fees.
- The Service Charges will continue until utility cost recovery is complete as long as the upgrades continue to function.
- 8.1 **Monitoring and Evaluation:** The utility or its Program Operator will compare each participant's post-installation actual annual savings to estimated annual savings at least once for each location. If any instances are identified where actual savings are below 80% of the location's estimated savings, the utility or its Program Operator will investigate to identify the cause and take appropriate action including those described in Section 8 above or enforcing agreements with contractors or participating customers.

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# Public domain: Guidance on notice to successor customers, disconnection, and billing

## Notifying Successor Customers of PAYS® Benefits and Obligations

Energy Efficiency Institute, Inc.—2019

### Background

The Pay As You Save® (PAYS®) system provides a vehicle for utilities to make cost-effective investments to upgrade the resource efficiency of properties that it serves. The utility's costs are recovered through a fixed tariff charge on the bill for the locations where upgrades are installed, and those charges are significantly less than estimated savings—a net financial win for customers.

Because the tariff assigns the obligation to a location not to an individual customer, PAYS® investments create a no new debt for the participating customer. Customers are assured of savings because efficiency upgrades are installed only if estimated annual savings are significantly greater than annual on-bill charges. If upgrades fail, payments stop until the upgrades are repaired. The tariff eliminates the need for personal or business loans to customers, the associated debt, and the risk that customer savings will not be adequate to cover the charges for upgrades during the customer's term of occupancy.

PAYS investments are not consumer loans such as energy efficiency loans, which are debt obligations that must be paid off by individual customers when they relocate. Customer concerns about their ability to take on new debt and whether they will be at the location long enough to receive savings that justify the investment are barriers to participation in loan programs. To dramatically increase customer participation, PAYS programs address these concerns, especially for customers in hard-to-reach market segments, such as renters and low- or moderate-income homeowners.

Customers who participate in a PAYS program supply pay lower utility bills while allowing the utility to recover its costs for the efficiency upgrades at that site. Unlike consumer loans for upgrades, the utility does not require all of its costs to be recovered from the first customer at that site because the investment is tied to the location, not the customer.

Because there is no customer debt obligation, PAYS programs do not involve transfer of a personal obligation from one customer to the next. As a result, the tariff charge survives foreclosure proceedings, changes in tenancy, and can be floated through periods of vacancy. Under the terms of the tariff, which continues to apply to the location until all costs are recovered, successor customers are obligated to keep paying their utility bills that are lower than they would have been without the upgrades. However, it is essential to notify successor customers of their benefits and obligations at an upgraded location to ensure that customers know about the improvements made to the home and to avoid potential misunderstandings.

### Notification to building purchasers

Based on experiences at 17 electric, gas, and water utilities in seven states, in 2018 EEI changed its recommendations for how best to notify successor customers that the home they are buying or renting has been improved to make it more resource efficient and less expensive to operate.

In jurisdictions where notices can be assigned affordably to the property records registry with a one-time payment, EEI recommends that the implementing utility take two simple steps: 1) prohibit pre-payment of unbilled PAYS Program Services Charges, and 2) record a Resource Efficiency Notice on the property records.

This two-step process provides sufficient notice to any prospective purchaser of a property who performs the minimum due diligence associated with a building purchase. This also ensures that the tariff charge will not have to be paid off by the original participant, keeping the PAYS promise that if participants fulfill all their obligations, when they leave and are no longer receiving savings, they will not have to make

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## Memorandum

**FROM:** Paul A. Gillo & Harlan Lachman; Energy Efficiency Institute, Inc. (EEI)

**DATE:** July 20, 2021

**RE:** Pay As You Save® (PAYS®) is consistent with "A Roadmap to Utility Service as a Human Right"

This memo addresses "A Roadmap to Utility Service as a Human Right" developed by the National Consumer Law Center and co-signed by a number of utility consumer advocacy organizations and its compatibility with the Pay As You Save® (PAYS®) system.

EEI agrees with the principles expressed in the Roadmap. In particular, we agree that safe, reliable, and affordable energy, water, and sanitation utility services serve essential human needs. We also agree that no household should be disconnected from these essential services based on the inability to pay.

*Essential Utility Services During the COVID-19 Pandemic and Beyond: A Roadmap to Utility Service as a Human Right*  
March 2021

- Safe, reliable, and affordable energy utility service—including heat, cooling, and light—is an essential human need.
- Safe, reliable, and affordable water and sanitation are essential human needs.
- Reliable, robust, and affordable broadband internet service is an essential human need.
- No household should be disconnected from these essential utility services based on the inability to pay.
- State laws, including those that direct the actions of public utility commissions and municipalities, and cooperatives, should explicitly recognize that uninterrupted utility service is an essential human need and essential to public health and safety.
- Utility service should be affordable for all households. In practice, that requires targeted, effective utility affordability programs sufficient to meet the needs of economically distressed households (such as percentage of income payment plans and/or discount rates).
- Utility billing and collection practices should recognize that uninterrupted utility service is an essential human need. In practice, that requires affordable debt retirement programs and prohibits, at a minimum, the assessment of late payment and reconnection fees, deposits, liens, sale of debt to debt buyers, and other aggressive collection practices.
- Utilities should monitor for and report on disparities in impacts by race and ethnicity on billing, collection, and termination practices, and all services provided, and correct any identified disparities.
- Utilities should provide robust and targeted energy and water efficiency services for economically distressed households.

EEI is the creator of Pay As You Save (PAYS), which is a system for delivering cost-effective resource efficiency upgrades through site-specific utility investments on the customer side of the meter with site-specific cost recovery. PAYS investments are secured in the same way that utility service is secured, which typically includes the possibility of disconnection for nonpayment. We support reforms spearheaded by the proponents of the Roadmap to protect low-income customers from punitive disconnections for nonpayment and efforts to make utility bills more affordable.

## Utility Guide to Tariffed On-Bill Programs

February 2020

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50 Hurt Plaza, Suite 1250, Atlanta, GA 30303  
[seealliance.org](http://seealliance.org)



## Software and Billing

Integration of a TOB program with the utility's billing and information system is an essential component of planning for implementation. Utilities may consider adjusting billing and management systems for TOB programs. Of the 18 utilities that have implemented TOB, only one paid for enhancements to support program implementation. This utility's cost for enhancements was under \$40,000. Utilities already considering enhancements to their billing and information systems can easily integrate requirements for a TOB program as part of the improvement project.

## Resources

- [Program Billing Systems and Administrative Functions Checklist](#)
- [Billing and Information System Enhancement Advice](#)

<http://www.eeivt.com/wp-content/uploads/2019/12/PAYS-Notification-System2019.pdf>

<http://www.eeivt.com/wp-content/uploads/2021/07/PAYS-Roadmap-Memo-Final3.pdf>

[https://www.seealliance.org/wp-content/uploads/SEEA\\_TOBGuide\\_FINAL\\_UPDATED\\_2020\\_04\\_13.pdf](https://www.seealliance.org/wp-content/uploads/SEEA_TOBGuide_FINAL_UPDATED_2020_04_13.pdf)



# Public domain: Overview of EEI's intellectual property.

## The documents described are available through program operators with permission for use.

### PAYS® Intellectual Property

Energy Efficiency Institute, Inc.—2019

The principal controlling document associated with tariffed on-bill programs based on the Pay As You Save® system is the PAYS® Tariff. An approved tariff creates the legal basis for actions the utility may want to take when implementing a tariffed on-bill program to allow its Members/customers to purchase resource efficiency upgrades. EEI includes its PAYS® Model Tariff in its intellectual property but offers it free of charge on its website.

EEI recommends several contracts, forms and worksheets for successful implementation of tariffed on-bill programs based on the PAYS system. These contracts and forms and other documents constitute EEI's PAYS Intellectual Property (IP). EEI licenses its IP to individual utilities and states for fees based on the size of the utility. EEI has licensed one or more program operators to use EEI's IP. Utilities that hire a licensed program operator to implement their program can do so without paying EEI for a license.

Not all forms or Agreements will be necessary (e.g., if a utility is the Program Operator, it can use the Program Operator Agreement to develop job descriptions but will not sign this agreement).

Additionally, EEI includes 25 pre-paid consulting hours with its IP to encourage implementing utilities to take advantage of our expertise.

### Agreement forms

- I. **Program Operator Agreement with the Utility:** This agreement establishes the role and responsibilities of the Program Operator and defines its relationships with the Utility. It can be adapted for job descriptions when the utility is the Program Operator. Signatories: Program Operator and Utility.
- II. **Contractor Agreement with the Program Operator:** This agreement certifies a contractor to perform work in the tariffed on-bill program and authorizes the Program Operator to oversee the project and the Certified Contractor's work on behalf of participating members/customers without assuming liability that belongs to the installing contractor (and/or product manufacturer). Signatories: Program Operator and Contractor (separate agreements for contractors and suppliers).
- III. **Efficiency Upgrade Agreement:** This Agreement specifies improvements to be installed and all participating members/customers' rights and responsibilities, and authorizes the Program Operator to oversee the project and the Certified Contractor's work on their behalf. Signatories: Member/Owner and Program Operator.
- IV. **Owner Agreement:** This agreement is required at sites where the member/customer is not an owner of the building but is responsible for paying the electricity bill. It permits the Program Operator and Contractor to install measures under the tariff and commits the building owner to maintain the upgrades in place and disclose the tariffed obligation to successor renters. Signatory: Building Owner or authorized representative.

Model Contracts & Forms for Programs Using the PAYS® System

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- V. **Measure Assessor Agreement/Quality Inspector Agreements:** Utilities and third parties that outsource on-site, cost effectiveness analyses and field inspections can use these agreements to define the scope of work and responsibilities for contractors performing these functions. These agreements can also be adapted for job descriptions when the utility or third party uses existing staff to fulfill them. Signatories: Program Operator and Assessor or Quality Inspector.

### Notice and other forms

- VI. **Work Acceptance:** This form is signed by the member/customer when the contractor has satisfactorily completed the installation of the listed measures. Member/customer refusal to sign the Work Acceptance form require investigation by the Program Operator. Signatories: Member/Customer and Contractor staff.
- VII. **Resource Efficiency Notice:** This form, signed by a successor member/customer prior to signing a lease or rental agreement for the premises, provides evidence that a building owner has disclosed tariffed obligations to a successor member/customer prior to their taking occupancy of the premises. Signatory: New member/customer seeking occupancy and retained by Owner as proof of providing notice.
- VIII. **Resource Efficiency Notice Recorded with Property Records:** In jurisdictions where notices can be easily and affordably be recorded with property records, this form ensures prospective buyers of a property learn about a home's efficiency improvements and tariffed obligations before purchase. If jurisdictions not allow for this notice, a variation of the Resource Efficiency Notice can be used for both renters and prospective purchasers. Signatory: None
- IX. **Utility Letter to New Customers at an Upgraded Location:** This form is sent by the Utility to all successor members/customers at a location where PAYS upgrades have been installed. The letter should provide both the notice the new customer should have received of the benefits and obligations of installed upgrades and instruct them, if they did not receive notice prior to the sale or rental of the property, of their recourse. Signatory: None; issued by utility to new members/customers.

### Measure screens (no signatories)

- X. **Upgrade Eligibility Tester:** This spreadsheet is the PAYS® Measure Tester/Charge Calculator formatted to calculate whether one upgrade or a package of upgrades qualifies for the tariff using the 80% rule. This analytic capability may be embedded in the cost-effectiveness analysis software package to streamline program implementation. EEI provides one editing of this template to accommodate each utility's specific rates, incentives, and fees (if any). Spreadsheet inputs are provided by Assessor or Program Operator.

Note: All of these copyrighted forms and contracts are available from the Energy Efficiency Institute, Inc. ([www.eeivt.com](http://www.eeivt.com)), 802-879-8895; email [harlan@eeivt.com](mailto:harlan@eeivt.com).

Model Contracts & Forms for Programs Using the PAYS® System

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### Other program forms

- XI. **Upgrade Failure Report:** This form is used by the Program Operator to document reports of measure failure, action(s) taken, and findings. Signatory: Program Operator staff.
- XII. **Sale of Non-Program Upgrades:** This form is used by Certified Contractors to document sales of work that does not qualify for the tariff, such as related building repairs. Member/customer acknowledges that non-program work is installed outside of the program and that the only warranty and assurances are those negotiated with the Contractor. Signatory: Member/Customer.
- XIII. **IP Agreement:** Licensed utilities may want to share EEI's IP with their lawyers or other service providers for review purposes. They may be required to share the IP with oversight boards and regulators. A licensed utility is required to be responsible for making sure that EEI's IP is not provided to unlicensed utilities, other efficiency experts, or contractors. Utilities are responsible to use this form to clarify reviewers' and others' responsibilities when provided with copies of EEI's IP. Signatories: EEI or licensee and individual or organization wanting to review EEI's IP.

### Additional documents for utility managers

EEI also offers two tools for utility managers considering implementing a tariffed on-bill program based on the PAYS system. The most current drafts of both of these tools will be distributed to licensees of EEI's IP.

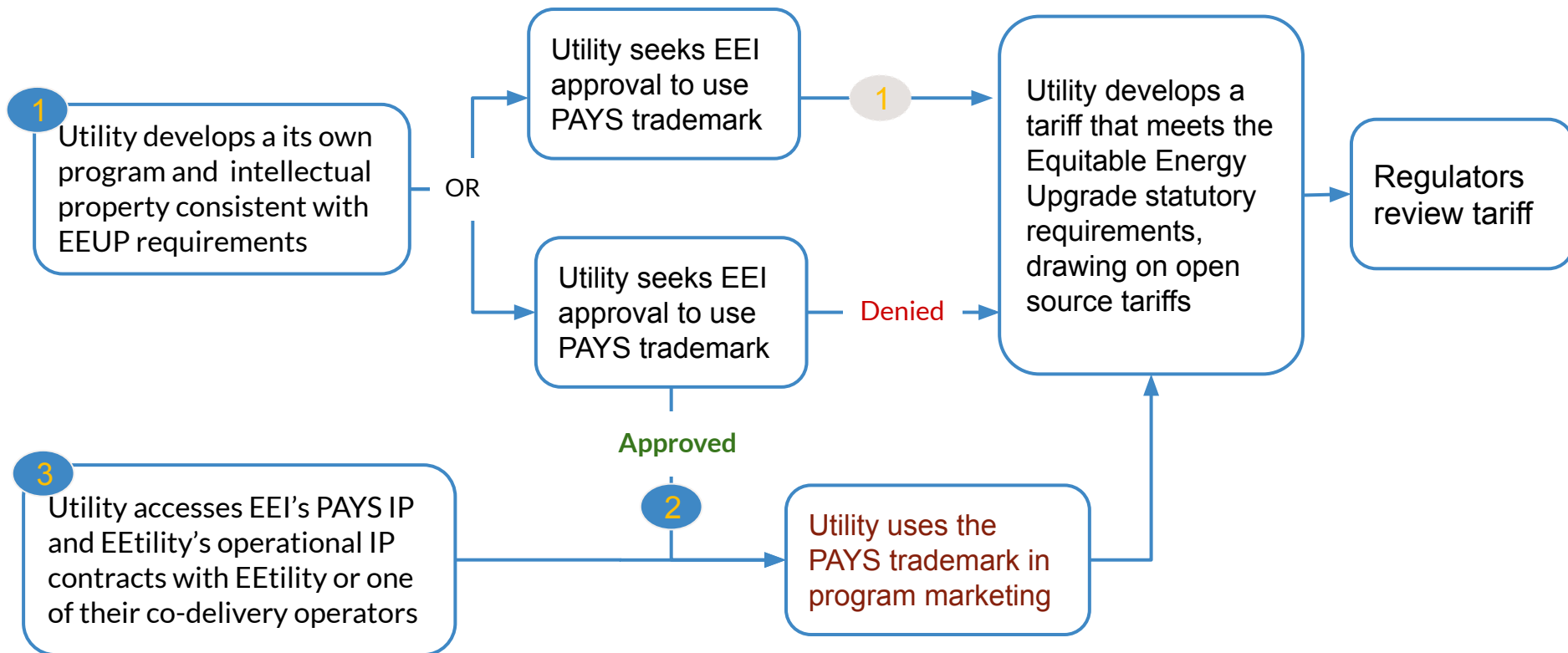
**Decision Tool for Utility Managers:** *Key considerations before investing in resource efficiency and rooftop solar through a tariffed on-bill program.* This document is intended to help managers determine if a tariffed on-bill program will be a useful investment program for their utility. The USDA Rural Utilities Service commissioned this resource through a Cooperative Agreement with The Roanoke Center in support of the EECLP program. This is a public domain document available from a number of sources, including EEI.

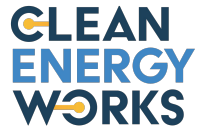
**Standardized Program Implementation Plan for a Standard Tariffed On-bill Program (residential).** This guide is intended to help utility managers implement residential tariffed on-bill programs, based on EEI's experiences with multiple utilities. The Standardized Program Implementation Plan is compatible with existing rebate programs, and it can incorporate industry standards for evaluation, monitoring, and verification (EM&V). Utilities may include public, commercial and residential customers in the same tariff, however, the implementation plans will be different due to the diversity in types and sizes of different loads. This document is included as part of EEI's Intellectual Property.

**Billing System and Administration Functions:** A checklist of program administration capabilities that can help a utility to accurately track and report program information for each location and investment. This checklist is designed to support considerations inside the utility regarding how to make use of existing systems, identify gaps, and acquire licenses to complementary software capabilities.

Note: All of these copyrighted forms and contracts are available from the Energy Efficiency Institute, Inc. ([www.eeivt.com](http://www.eeivt.com)), 802-879-8895; email [harlan@eeivt.com](mailto:harlan@eeivt.com).

## Use of intellectual property from EEI and the Pay As You Save trademark are optional.





# Thank You

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